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**Economic Outlook.** *A second recession in as many years seems under way. How deep, how long? It depends mainly on the spending mood of consumers, a further drop in interest rates.* 1

**Squeeze on the States.** *Big budget problems lie ahead for states, localities. Red ink will force spending cuts, tax hikes. Implications for the economy and for financial markets.* 5

**Managing Money Flows.** *Some $600 billion moves through the U.S. banking system every day. Coping with those massive payments is the task of a bank's "money-position" managers. A primer on such operations—and how they affect Fed monetary policy.* 11


## Economy Watch

RECENT economic numbers have been almost universally bleak. The weakness visible all year in housing and autos clearly has spread to much of the rest of the economy. Industrial output has dropped sharply in the past two months. Moreover, in October only 33% of all nonfarm industries reported increases in employment levels—down from 57% in September, and virtually identical to the reading in the depths of last year's recession. Over all, the October unemployment rate, at 8%, was the highest in six years.

The pronounced sag in activity has once again caught the forecasting community by surprise. Whereas a scant six weeks ago most analysts—including those at The Morgan Bank—expected that the economy would avoid a downturn, most now characterize the economy as being in a recession, the second in as many years.

Reflecting the marked change in conditions that has recently developed, the current Morgan Bank forecast shows a decline in "real" (price adjusted) GNP in the fourth quarter at a 3% annual rate (table on page 2). Just a month ago the expected drop was less than a 1% rate.

With hindsight, it is not difficult to explain the current decline in activity. Interest rates have been at punishing levels throughout the year—with the marvel being, really, that they didn't bite any earlier. Indeed, it was probably because the broad economy was able to hold up so remarkably well for so long—despite the interest-rate burden—that many analysts underestimated the developing downside risks. But the drop in demand was gradual so that it obscured the imbalances that were building up between sales and inventories.

Over the past month, data on business inventory positions—which are released with a

considerable lag—have pointed increasingly to the emergence of excesses in the durable-goods sector (chart on page 3). With the recent availability of August data on constant (1972) dollar stocks and sales, mounting overhangs—which first began to show up in the July inventory/sales ratios—were confirmed in the durable manufacturing sector and in the nonauto durable trade sector. Inventory behavior in these areas traditionally has been the most volatile component of inventory adjustments. The August data also indicated that the current inventory cycle is unfolding in a fashion similar to those of the past—with the buildup in inventories mostly due to weakness in sales (table on page 3). Moreover, while constant-dollar data are not available for September, book-value figures suggest that inventory positions in that month worsened significantly in durable manufacturing.

Reflecting those trends, the economy now appears to be in the midst of a relatively moderate inventory adjustment. The drag from this inventory cycle comes on top of an already weak outlook for final demand. Employment and production curtailments in October were concentrated in the very areas where inventory excesses are apparently most burdensome. The quick response of manufacturers in adjusting production schedules downward should result in a significantly slower rate of inventory accumulation in the current quarter—probably at an annual rate of something like $2 billion (expressed in 1972 dollars)—compared with about $10 billion in the third quarter. It would then be reasonable to expect a further move to at least a modest amount of actual liquidation of inventories early next year if production schedules, as seems likely, are kept under tight rein.

The assumption that the inventory adjustment cycle will be of moderate character must of necessity be tentative as of now. Ultimately, of course, the crucial determinant will be how well or poorly consumer spending holds up in the Christmas selling season—a period in which merchants account for more than 25% of their annual sales volume. Nonauto retail activity in October continued the lackluster performance of recent months. Moreover, consumer-sentiment readings have deteriorated and that deterioration could easily be accentuated by the bulge in unemployment and the growing consciousness that recession has developed.

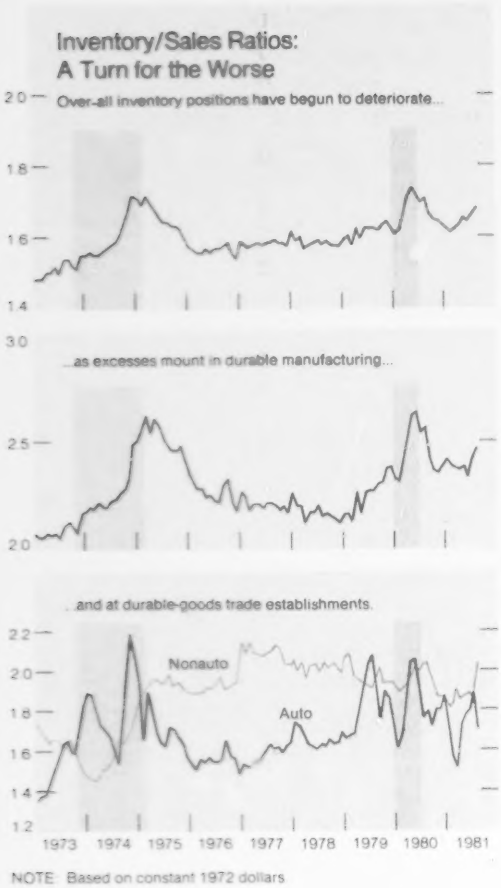
A second crucial factor in the outlook obviously is the trend in interest rates in coming months. Already, rates have dropped sharply

## Economic Projections

*(Percent change at annual rate from previous quarter, except where noted)*

| | 1981 | | | 1982 | |
|---|---|---|---|---|---|
| | Q2 | Q3 | Q4 | Q1 | Q2 |
| Real GNP | −1.6 | −0.6 | −3.0 | 1.0 | 3.4 |
| Real consumer spending | −2.1 | 4.3 | 0.1 | 2.6 | 2.1 |
| Real business-capital outlays | −2.2 | −0.2 | −2.9 | 0.2 | 2.6 |
| GNP deflator | 6.4 | 9.4 | 7.9 | 7.0 | 6.4 |
| Consumer prices | 7.5 | 11.9 | 9.8 | 7.1 | 6.5 |
| Real disposable personal income | 1.4 | 2.3 | 2.2 | 1.2 | 2.0 |
| Saving rate (%) | 5.4 | 4.9 | 5.4 | 5.1 | 5.1 |
| Housing starts (Millions) | 1.18 | .97 | .90 | 1.05 | 1.21 |
| Auto sales (Millions) | 7.8 | 9.1 | 8.1 | 8.2 | 8.2 |
| Unemployment rate (%) | 7.4 | 7.2 | 8.0 | 8.1 | 8.2 |

NOTE: 1981 Q2 and Q3 data are actual. Approximately one percentage point of the rise in the GNP deflator in the fourth quarter reflects the timing of federal pay increases.




NOTE: Based on constant 1972 dollars.

all across the maturity spectrum and further declines almost certainly lie ahead. That prospect is likely, given the soft tone of the economy and the likelihood that the Federal Reserve will continue to aim at increasing the rate of growth of the monetary aggregates (particularly M1B, which has shown virtually no growth over the past six months). What is particularly crucial to the business outlook is that long-term rates continue to decline; unless this happens, it is very difficult to see rejuvenation in housing activity or an upturn in capital investment.

Until quite recently, the common expectation was that a major decline in long-term rates was precluded by the huge borrowings in prospect by the federal government to finance an estimated $80-billion deficit, by a large backlog of unmet needs for financing on the part of businesses and state and local governments (story on page 5), and by hesitance on the part of traditional long-term investors to commit their funds to the mortgage and bond markets—owing to their concern over inflation. Now, with the economy considerably softer than anyone had expected a month or two ago, it suddenly seems possible that the recent rally in bond markets could carry considerably further than was expected—especially if the recession contributes materially to reduced inflation. Whether the rally in fact persists—along with how well consumer buying fares in the Christmas season—is likely to be the key in determining how severe and long-lasting the recession turns out to be.

It is somewhat reassuring that the 1980-81 expansion was of such short duration that traditional cyclical fatigue had little opportunity to

## Recent Inventory Developments

*(Annualized percent changes from May to August 1981, based on 1972 dollar data)*

| | *Inventory stocks* | *Sales* | *I/S ratio** |
|---|---|---|---|
| Manufacturing and trade | 5.2 | −3.3 | .03 |
| Manufacturing | 0.6 | −5.4 | .02 |
| Durables | 2.0 | −12.5 | .09 |
| Nondurables | −2.6 | 4.9 | −.02 |
| Trade | 10.6 | −1.4 | .05 |
| Wholesale | 6.0 | −13.5 | .07 |
| Retail | 14.3 | 8.8 | .02 |

*Simple change in I/S over designated period.

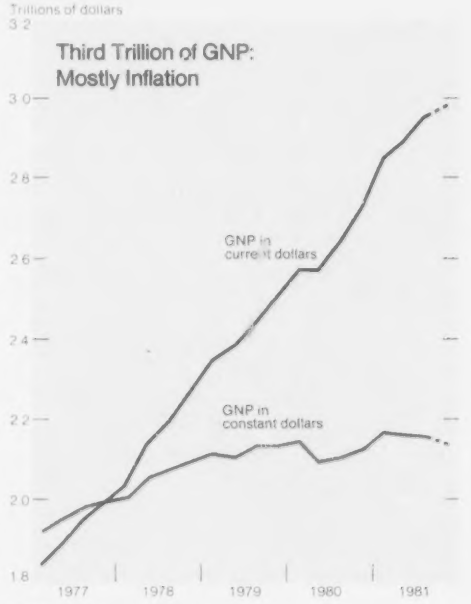
## $3 TRILLION—AND COUNTING

IN January 1978, it was forecast in these pages that GNP would reach $3 trillion on April 29, 1982. It appears now that the economy will reach that milestone on December 15, four months and fourteen days ahead of schedule.*

The early arrival of a $3-trillion GNP is mainly the result of being closer to that mark when the forecast was made than was thought at the time. Indeed, the third-quarter 1977 GNP—which served as the base for the original forecast—was subsequently revised upward by $34.5 billion. That rise accounted for nearly three months of the early arrival. The rest is explained by a slightly faster average rate of increase in GNP than was assumed when making the projection.

As it turned out, the actual increase in GNP from the third quarter of 1977 to the third quarter of this year was at a 10.9% annual rate—rather than the projected 10% rate. Unhappily, the composition of that growth rate, as between "real" growth and inflation, was considerably less favorable than had been expected four years ago. Since the third quarter of 1977, the growth rate of real GNP has averaged only a 2.1% annual rate, whereas the GNP deflator has increased at an average annual rate of 8.5%. In other words, of the third trillion dollars of GNP, only about $200 billion will represent additional goods and services. The remaining $800 billion will have been simply the result of higher prices.

For the fourth trillion, The Morgan Bank expects a better trade-off between inflation and real growth. But whether or not this optimism is justified, a 10% annual rate of growth in nominal GNP continues to seem the most likely prospect. If the 10% growth assumption proves correct, GNP will pass the four-trillion mark in barely three years—on December 22, 1984.




NOTE: Fourth quarter 1981 plottings are estimates

*The GNP mileposts are flying by at an accelerating pace. The first trillion required over 200 years. The second trillion was added in a little over seven. The third trillion will take less than four years.

develop. And it is reassuring also that 1982 will bring the second installment of income-tax cuts.

Those ingredients should act to keep the present drop from becoming severe. But, in view of recent economic surprises, it is perhaps best to avoid hard-and-fast forecasts. At this juncture, the risk in any forecast probably is on the downside.

# Fiscal Stress for States and Localities

A new era of austerity lies ahead for the nation's states and localities. People and businesses all across the country will feel the squeeze as spending is scaled back and new taxes are levied. For many jurisdictions, fiscal deterioration already has led to lower credit ratings. And the prospect of widespread deficits at the state and local level has been a depressing influence on municipal bond markets. While some entities continue in sound fiscal shape, the operating balance* of states and localities as a whole seems likely to slip into a sizable $5-billion deficit in 1982 (chart on page 6).

The slippage underscores the dramatic change that has occurred in the financial affairs of states and localities in the last half decade. Whereas earlier in the post-World War II period state and municipal spending had marched steadily upward year after year, forced retrenchment began to set in during the mid 1970s. The fiscal difficulties of state and local government first became evident with New York City's brush with bankruptcy in 1975, then intensified in the late Seventies with the spread of Proposition-13 type tax revolts and a scaling back of federal aid.

Belt-tightening worked reasonably well in the sense that most states and localities coped successfully in getting their budgets under control. Indeed, the state and local sector as a whole managed to run an operating surplus consistently in recent years. That, however, is expected to change next year, as many budgets slip into deficit.

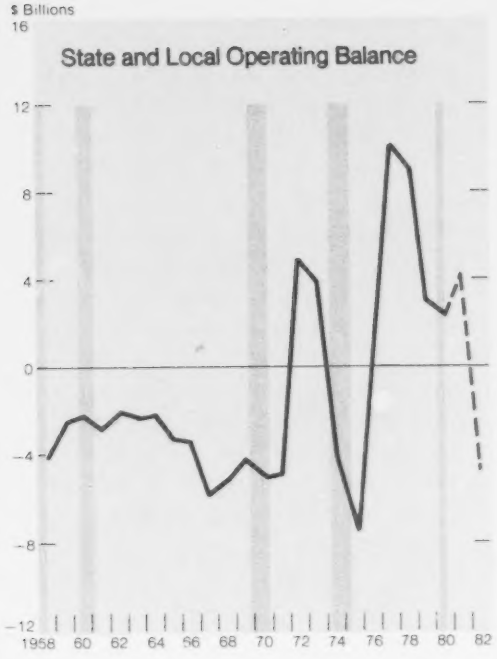
*The operating balance of all state and local governments combined, as reflected in the national income accounts, includes both current and capital budgets; it excludes surpluses registered by state and local pension funds. Before 1972, when general revenue sharing was enacted, the operating balance typically was in deficit, with the deficit financed by long-term borrowing.

To restore balance in their accounts and confidence in financial markets, many states and localities have been intensifying efforts to curb spending and raise taxes. During the past year, for instance, outlays for highways, waste treatment, and community development have fallen sharply. And some 30 states have raised taxes by a net $2.5 billion—mainly through higher sales, excise, and oil-severance taxes. In many parts of the country, however, increasing resistance to the paring of programs is apparent—even as voters also are displaying increasing opposition to tax hikes. These conflicting attitudes suggest that many state and local officials will face a major political and fiscal challenge in the years ahead.

## *An eroding revenue base*

Erosion of state and local revenues began in mid 1978 with passage of Proposition 13 in California. Following that vote, a wave of tax and spending limitations that rolled back or indexed personal tax increases and reduced property taxes seriously restrained the revenue growth of many jurisdictions. While governments often were able to maintain spending programs by drawing down surpluses, for many entities this option appears to have run its course. California, for instance, now finds that tax relief measures have depleted its surplus and that further spending cuts are needed in order to avoid large deficits.

A scaling back in the growth of federal aid to states and localities also has contributed to erosion of their revenue base. The curtailment dates from early 1979 when Washington started to phase out local public-works and employment programs. And further retrenchment was herald-




ed last March by President Reagan's proposal to wean states and localities from their dependence on federal aid. At that time, the President proposed that federal grants be cut by $14 billion from the almost $94 billion recommended by the Carter Administration for fiscal 1982. The President also recommended that responsibility for many domestic programs be transferred from the federal government to the states, mainly by consolidating narrow grants designed for specific programs or projects into broader block grants with few strings attached.

The reconciliation bill passed by Congress in late June gave the President most of his requests. Under this legislation, federal grants are expected to fall by $7 billion in current dollars, or by 8%, between 1981 and 1982. In "real" (inflation-adjusted) terms, the decline is expected to amount to 14% over the four quarters of 1982; in contrast, federal grants recorded real yearly gains averaging 6% during the past decade (chart on page 7). Since federal aid accounted for more than a fifth of state and local revenues in 1981, the decline in these flows should lead to a significant reduction in state and local activities as many units curtail services, defer maintenance of the capital infrastructure (e.g., bridges, roads, sewers), or turn activities over to the private sector. One area already feeling the pinch in many states is welfare. According to a recent Congressional study, this is the first year since 1973 that fewer than half the states have raised benefits under Aid to Families with Dependent Children, and five states actually have cut benefit payments.

In addition to cutbacks in federal aid, states and localities could see tax collections reduced by almost $2.5 billion in 1982 as a result of passage of The Economic Recovery Tax Act of 1981, according to estimates by the Congressional Budget Office. Cuts in personal tax rates and accelerated depreciation will affect revenues because of the close linkage between state and federal tax systems and the strong reliance of states on the federal corporate tax base.

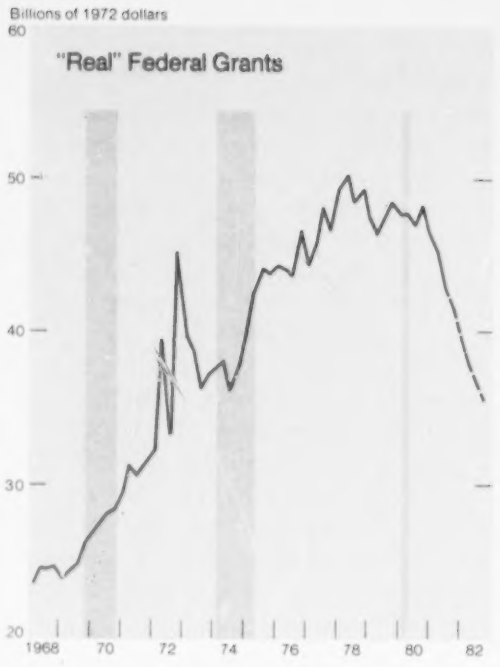
Three states—Nebraska, Rhode Island, and Vermont—have "piggyback" systems in which personal tax liability is a percentage of federal tax liability; they will face the largest revenue losses from tax-code revision. Seven other states—Hawaii, Idaho, New Mexico, North Dakota, Oklahoma, Oregon, and Utah—use the federal definition of taxable income to compute taxpayer liability. By liberalizing charitable deductions, reducing the marriage penalty, and excluding reinvested dividends, the 1981 legislation has changed the federal definition of taxable income and, hence, will reduce revenues for these states.

Moreover, 35 states having a corporate in-

come tax use federal taxable income as their tax base. In addition, those states that have their own definitions of taxable corporate income have adopted the federal depreciation schedule. Implementation of the newly liberalized depreciation schedule, therefore, could result in a loss of revenues for these entities.

Prospective losses stemming from the 1981 Act have prompted some states to consider severing links with federal tax formulas. Others will need to increase tax rates, redefine income, or adopt new depreciation schedules to offset the effects of the Act. The revenue-raising potential of many jurisdictions, however, may be limited in part by the traditional hesitance of governors and mayors to raise tax levels for fear of giving neighboring locales an edge in the contest to attract new industry.

The recent contraction in the U.S. economy is yet another factor contributing to state and local fiscal problems, since declines in nominal economic growth and consumption act to depress income and sales tax collections. Even with the revenue-raising actions that some 30 states have taken this year, the economic contraction is expected to slow the growth of state and local tax collections to a 9% pace in 1982 from the 11% gain now expected for calendar year 1981.




NOTE: Estimates by The Morgan Bank based on National Income Accounts.

## *Market reaction*

With the steady erosion of state and local finances—plus the Federal Reserve's tight monetary stance over the past two years—many entities have found the municipal bond market less receptive to their issues than formerly. Such difficulties were particularly acute last summer, when large institutional investors withdrew from the market and bond prices slid to record lows. At the same time, the interest rates that governments had to pay rose to historic highs. The Bond Buyer Index of municipal yields, for instance, hit a record 13.2% in early September. Since then, tax-exempt bond markets have stabilized and interest rates have retreated somewhat. Nonetheless, rates remain extraordinarily high by historical standards, with the result that state and local governments have been postponing trips to the long-term market.

Instead, they have been turning increasingly to the short-term market, e.g., with issuance of bond-anticipation notes. In the first nine months of this year, short-term borrowings by states and localities totaled some $25 billion, 17% higher than in the same period last year. With some congestion building up in the traditional short-term market, a few jurisdictions recently

have begun issuing tax-exempt commercial paper. In part, this shift toward shorter maturities seems to reflect attempts to carry on projects with short-term funds in the expectation that long-term rates will fall in the months ahead.

Because of their eroding fiscal positions, a number of jurisdictions—e.g., Minnesota, Washington, and Wisconsin—have found their credit ratings downgraded in the past year. Others have been virtually shut out of the market. This happened to Boston, for instance, after passage last November of Proposition 2½, which over the next several years will reduce property taxes in Massachusetts from about 6% to 2½% of a community's full property values. In any event, both increased borrowing and an elevated level of rates in short-term as well as long-term markets have caused debt service to rise sharply as a percentage of total spending for state and local governments.

Further complicating the financing problems of these units is that the unrestricted use of industrial development bonds has crowded traditional tax-exempt borrowers out of long-term markets. In addition, various provisions of the 1981 tax legislation—in particular, the reduction of the maximum tax on unearned income from 70% to 50%, the introduction of the All Saver's certificate, and the liberalization of rules covering leasing (encouraging some investors to shift funds from tax-exempt bonds to tax-exempt leases)—are expected to reduce the attractiveness of municipal issues. This would tend, of course, to raise the financing charges on debt issued by states and localities.

### *Impact on the business cycle*

The financial plight of state and local governments may adversely affect the U.S. economy's ability to withstand sharp fluctuations in activity. Traditionally, state and local fiscal actions have blunted recessionary tendencies, since increases in spending by these units typically have outpaced their revenue collections during periods of economic slack. Welfare and unemployment payments, for example, tended to rise with declines in economic activity while income and sales tax receipts tended to fall. Moreover, growth of state and local purchases (excluding income support payments) has tended to remain strong over the business cycle. This strength has been encouraged by rapid increases in federal grants and by an expansion in demands for public services brought about by a growing population. As a result, the state and local sector grew at a rate substantially faster than the economy as a whole from the end of World War II through the mid Seventies—with state and local spending rising from about 6% of GNP to a peak of 15% in 1975. The sector's rapid growth provided support for over-all economic activity during downward phases of the business cycle.

In the latter half of the 1970s, however, the growth of the state and local sector slowed to about half the previous pace—and its share of GNP declined to around 13%. This reflected a reduction in the size of the school-age population, a decrease in the growth of federal aid, and passage of Proposition 13-type taxing and spending limitations. As a result, for the first time since the end of World War II the state and local sector did not help offset recessionary trends during the second quarter of 1980. Moreover, during the subsequent recovery state and local units failed to provide their usual boost to aggregate economic activity.

This sluggish trend is likely to continue in the year ahead. Between the cyclical trough in the second quarter of 1980 and the fourth quarter of 1982, state and local purchases of goods and services (in constant dollars) are expected to

*decline* by almost 1%. In comparison, during the ten quarters following the previous six cycles purchases *rose* by an average 3.7% (table on this page). The current weakness can be traced to a modest decline in employment and a sharp drop in construction relative to past cycles (charts on page 10).

### *The options ahead*

In the next few years, state and local officials clearly will face an unprecedented need to exercise discipline over budgets. Erosion of the revenue base, together with the continuing need to provide essential public services, may well force a scaling back of new capital-spending plans as well as deferral of maintenance on existing facilities. Austerity may also force cuts in programs devoted to improving human capital—e.g., basic education, vocational training, and health care.

Such bad news may have salutary effects. After the rapid growth of state and local activities during most of the postwar period, it is important for these units to recognize that resources are limited and that officials have to sharpen their priority-setting procedures. It is equally important, however, for public officials to recognize that both physical infrastructure and human-capital programs will have to complement private-sector investments in the efforts begun by the Reagan Administration to revitalize the economy and spur productivity growth. Over the long run, in other words, failures at the state and local level to maintain the nation's stock of physical and human capital could detract from achievement of the nation's economic goals.

States and localities obviously have a major stake in the Administration's economic recovery program. Its success would enhance the revenue base of all governmental units, thus brightening the fiscal outlook considerably for many entities. At the same time, a sounder fiscal position at the state and local level would offer greater promise that these entities can actually assume some responsibilities being shed by the federal government.

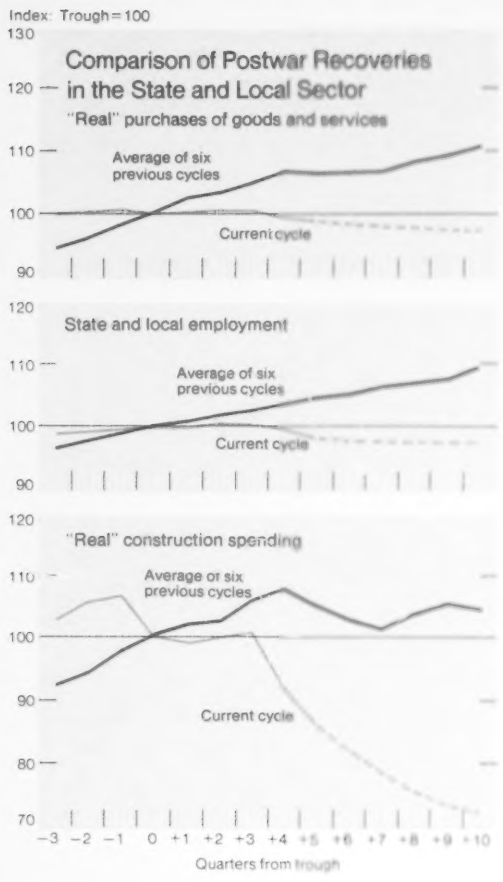
The transition nevertheless promises to be rough. Benefits from the recovery program may be some time in coming, while the impact of state and local austerity is already being felt in many places. This suggests that increased attention should be paid to easing adjustment problems, particularly in areas—like community

## State and Local Activity Over the Business Cycle

*(Percent change; compound annual rate)*

| | *1980:2 to 1982:4* | *Average of six postwar recoveries in ten quarters after trough** |
|---|---|---|
| Total expenditures | 7.5 | 8.4 |
| Purchases of goods and services | 7.4 | 8.7 |
| Purchases of goods and services, 1972$ | −0.9 | 3.7 |
| Construction | — | 4.7 |
| Construction, 1972$ | −12.4 | 0.9 |
| Payroll employment | −1.0 | 3.5 |
| Federal grants | −3.6 | 11.3 |
| Operating balance ($ billions) | −2.0† | +9.4‡ |

*Trough quarters are 1949:4, 1954:2, 1958:2, 1961:1, 1970:4, and 1975:1.
†Absolute change over ten quarters after trough.
‡Average of last four recessions, due to lack of detailed data on operating balance before 1958.




development and waste treatment—that are most affected by the President's program. Some such steps, in fact, already have been taken. In late September, for instance, Congress permitted some states to delay taking over certain programs recently converted to block grants. More basically, however, Washington policymakers need to face up to the political difficulties of curtailing hitherto "untouchable" entitlement, or transfer, programs. Tackling these programs is essential if federal spending is to be brought under control and the high interest rates that have created severe borrowing problems for states and localities are to fall substantially.

Over the longer term, if the President's aim of shifting responsibilities back to states and localities is to be fulfilled, alternative sources of financing for these entities must be found. The Administration recently suggested that states and localities tap the increase in after-tax incomes resulting from The Economic Recovery Tax Act of 1981. Such actions, however, may find little support from a tax-weary electorate. Moreover, one source of added revenues—increased excise taxes on tobacco, alcohol, and gasoline—may be preempted in the future by the federal government's need to reduce the fiscal 1983 and 1984 budget deficits through "revenue enhancement" measures.

Against this background, states and localities face a tough financial future—one that will require hard political and economic decisions on spending and taxes.

# Life at a Bank's Money Desk

A huge volume of payments moves through the U.S. banking system daily. Besides $100 billion or so of checks, some $500 billion more moves from bank to bank electronically on a typical business day.

For banks, the handling of these massive payments involves far more than processing checks, making computer entries, and updating ledgers. A bank has to maintain enough liquidity to handle outgoing payments—that is, to cover any net deposit withdrawals, loan extensions, and securities purchases. It also has to leave enough on deposit at the Federal Reserve to meet its reserve requirements. However, a bank doesn't want to keep more funds at the Fed than are needed to meet those requirements, since that would entail a loss of potential interest income.

The challenge is particularly great at money-center and regional banks. Many customers of those banks—including large corporations, domestic and foreign correspondent banks, and securities firms—manage large money positions themselves and have a heavy volume of financial transactions. They receive and pay out far more each day than they keep in their accounts overnight. These transactions can have a major impact on their banks' reserve positions.

Coping with such money flows is the task of a bank's "money-position" managers. Their main aim is to acquire funds to meet their bank's reserve requirements at the lowest possible cost. Their actions, however, have a wide impact, since the competition for reserves among banks, together with the Fed's supply, determines the level of the Federal funds rate.

Indeed, it is because of this connection to monetary policy that the rules for bank reserve requirements have been such a heated issue. As was discussed in these pages last April, many monetarists object strongly to the existing system of lagged reserve requirements—which bases a bank's required reserves in any week on its deposits two weeks earlier—arguing that it exists simply to make life easier for bank reserve-position managers.* They want a bank's reserve requirements to depend on its current rather than past deposits, asserting that such contemporaneous reserve requirements would enhance monetary control. And earlier this month, in fact, the Federal Reserve requested public comment on a possible change in its rules that would move bank reserve requirements some considerable distance toward the contemporaneous mode.

Clearly, the issue central to such a change is its probable impact on bank reserve management. For this reason, coupled with the importance of bank reserve adjustment in implementing monetary policy, it is worth examining the process from the vantage point of money-position managers.

## *How money moves around*

A bank's reserve account at the Fed is constantly buffeted by the payments and receipts of its customers as well as by its own (as when it buys or sells securities). When the bank is presented through the clearing process with a check drawn on a customer's demand deposit account, for instance, the check is effectively paid through a transfer of funds to another institution from the bank's reserve account at the Fed. Similarly, when checks are deposited at the bank by its customers and then are collected, that raises the bank's balance in its Fed account.

*"Changing the Fed's Rules on Reserve Accounting," *The Morgan Guaranty Survey*, April 1981.

Most of the activity through a money-center bank's reserve account results not from checks but from large-value electronic payments and receipts on behalf of customers. To make a payment, one of these customers sends an instruction to its bank by cable, computer link-up, or even over the telephone for the bank to pay funds to a specific party with an account at another bank. A clerk then instructs the bank's "money transfer" computer to send out an electronic payment message.

The largest volume of such electronic payments—presently totalling $330 billion a day—is made over a Federal Reserve transfer network known as Fedwire. The sending bank's computer tells another computer at the Fed to transfer funds from the sender's to the receiver's reserve account, and to inform the receiving bank of the transfer. The payment is made instantly—in the form of entries on the books of the Federal Reserve.

Most other electronic payments—presently totalling $180 billion a day, primarily related to international trade or finance—are handled by the New York Clearing House system known as CHIPS. To make a CHIPS payment, a bank transmits the relevant data electronically to the CHIPS computer, which will immediately advise the receiving bank—again, electronically—of all the details. However, unlike transactions via Fedwire, the actual transfer of funds will not occur until later that day. At 4:30 p.m. eastern time, CHIPS stops accepting payment instructions from its members and totes up the day's activity. Offsetting payments between CHIPS members are netted out, and each participating bank is informed of how much it owes other CHIPS participants or is owed by them. Then by 6:00 p.m. all banks owing money to other banks "settle" their CHIPS positions by making payments out of their reserve accounts over the Fedwire (described in the box on page 13).

The ebb and flow of money through a bank's Fed account, much of which results from CHIPS and Fedwire transactions occurring late in the business day, can require a bank's money-position managers to scramble to acquire or dispose of Federal funds late in the day. They neither want to leave more funds at the Fed than are required, nor let their bank's Fed account become overdrawn.*

### *Watching the numbers*

In meeting its reserve requirements, what counts for a bank is each day's balance in its Fed account as of 6:30 p.m. eastern time, when the Fedwire shuts down for the night and the Fed strikes a closing balance in each bank's reserve account.** A bank does not have to hold the same amount of reserves each day, but rather must maintain an average closing balance in its Fed account over each Thursday-to-Wednesday weekly period which equals or exceeds that week's reserve requirements. Its only latitude is that it can end the week up to 2% short of its requirements. In that event, it has to make up any deficiency in the following week, and it also cannot "under-reserve" in that period.†

*The Fed allows banks some leeway to overdraw their reserve accounts during the course of a day's transactions. But if any "intra-day" overdrafts are not made up by the end of the day, a bank faces monetary penalties. It must pay the Fed "interest" on the overdraft at an above-market rate, but still has to make up the overdraft. Thus, the bank ends up paying interest on funds it cannot use to meet reserve requirements.

**The Fed allows banks to count the cash in their vaults as part of the funds held to meet reserve requirements. Vault cash meets only a very small fraction of the reserve requirements of large banks, however.

†A bank may carry forward up to a 2% excess of reserves from one week to the next, but loses the value of any such excess if it "over-reserves" a second week in a row.

A bank's money-position managers start each day with a target for the bank's account balance at the Fed that evening. Critical to that objective are the customer inflows and outflows which the bank is likely to have, as well as the amount of funds that the bank's own activities may require. That permits a tentative decision concerning what amount to "buy" or to "sell" —i.e., to borrow or lend—on an overnight basis in the Federal funds market. However, that decision is never final until Fedwire closes for the day, for unexpected inflows and outflows can net to a very large amount—sometimes approaching or even exceeding the bank's reserve requirement.

Typically, as the day goes on, a bank can't readily tell whether its estimates of net inflows or outflows is going to be correct. All day long its balance at the Fed will be changing—up hundreds of millions of dollars one minute, and down just moments later. The bank might need to raise or lower the amount of money it borrows that day in the Federal funds market. But to make the right decision, the money managers need to be able to tell, for instance, whether a 3:00 p.m. shortfall of funds means that they underestimated the day's funding requirements or simply that the shortfall will be made up by customer inflows between then and the close of Fedwire at 6:30 p.m.

If the day is a Wednesday—settlement day—falling below that day's reserve-account target could mean that the bank would not have maintained sufficient funds to meet its weekly-average reserve requirement and would have to borrow from the Fed's discount window to close the gap. Since that can easily wear out a bank's welcome at the window, it will ordinarily try to obtain the needed amount in the funds market. But it is not uncommon for a bank to go ahead in such circumstances and buy additional Fed funds, and then find later on that more money has arrived over the wire. And when that happens, it leaves a bank with an excess of funds to try to sell off within the final moments of the reserve week, a time when most of the banking system is often already sitting with enough funds to meet its reserve requirements and has no interest in borrowing any more money overnight. If the bank could sell the funds, the rate on such a transaction might

## CHIPS AND SAME-DAY SETTLEMENT

UNTIL last month, transactions over the CHIPS system—now totalling $180 billion per day—took two days to be completed. Banks would enter CHIPS payments on their books on day one, but wouldn't actually exchange any money until 10:00 the next morning. Thus, CHIPS transactions were said to be made in "next-day funds" while those over Fedwire were on a "same-day" basis.

That sent many bankers home at night wondering whether they would awaken the next morning to find that the banks owing them money in the day's CHIPS settlement had failed—a worry that was highlighted by the failure six years ago of Bankhaus Herstatt. It took until early 1980, however, for the New York Clearing House members to agree among themselves that same-day settlement—with payment at 6:00 p.m. of the day a transaction occurs—was the best way to control the CHIPS credit risk. Then the New York Clearing House and its members had to prepare their computer systems to handle same-day settlement. And planning had to be done throughout the financial system for the change in settlement of Euro-dollar and foreign exchange transactions which comprised the bulk of CHIPS activity. As a result of all the planning, however, the switch to same-day settlement came off without a hitch this past October 1.

well be lower than that at which the funds were previously bought.

Sometimes, of course, other banks do still need reserves up until the very end of the final reserve day to avoid settling their reserve positions by borrowing at the discount window. In such circumstances, a bank with funds to sell could get a premium rate. But on the ordinary Wednesday, a bank has a difficult time judging during the course of the day whether that will be the case.

### *A $500 million example*

Even when it's not a Wednesday, late-in-the-day deposit flows can create significant reserve-position difficulties. For illustrative purposes, consider a money-center bank having a $500-million weekly-average reserve requirement. The day is Friday, and the bank starts out in the morning knowing that Thursday's closing balance was $500 million. The bank plans on holding another $500 million in its Fed account Friday night, and for most of the day there is nothing to indicate that the bank's closing reserve balance will differ appreciably from that amount. However, as the hour gets late, it begins to seem that the bank's balance is going to be somewhat above the projected level. And then interest rates soften substantially late in the afternoon—perhaps because of an unexpected drop in the money stock, as reported by the Fed at 4:10 p.m.—and that is followed by further unexpected inflows of funds. By 6:00, the bank has a reserve balance of $900 million, rather than the intended $500 million.

Unless the bank can sell its excess funds to another institution in the next few moments—and banks are rarely bidding for funds very aggressively late on Fridays, particularly when a low money figure has just surprised the market—the bank will accumulate a substantial reserve excess for three days of its reserve week, relative to its $500 million requirement. Such a reserve excess would sharply reduce the bank's flexibility in managing its Fed account in the remaining days of the reserve-settlement week. After keeping $500 million for one day and $900 million for three days at the Fed, all that the bank would have to keep on the following Monday through Wednesday—for its weekly holdings to average $500 million—would be $100 million per night. Thus, virtually no matter what might happen to the Federal funds rate in the next three days, the bank's latitude to alter its own Federal funds activity would be almost nil.

A similar constraint sometimes arises, moreover, because of computer difficulties. When one bank's computer becomes unable to initiate outgoing payments, as unfortunately happens in the banking system from time to time, both it and other banks are affected. It sits overnight with excess reserve balances, while the banks to which it would have transferred funds are deficient. When the amount of the missed payments is not too large and if there is time remaining in the reserve week, such imbalances can typically be corrected. But it all becomes a matter of arithmetic, and sometimes there is simply no possibility for a full correction.*

### *Added costs*

The abundant possibilities for costly diffi-

*Take the case of the above bank with a $500 million reserve requirement which holds $500 million on Thursday. Suppose that, because of a computer problem, it holds $1.5 billion on Friday. Even if it could reduce its reserve balance to zero on Monday through Wednesday—a virtual impossibility—it would still end up having held an average reserve excess of more than $200 million over the reserve week.

culty in managing a bank's reserve position would be increased further if contemporaneous reserve requirements were imposed. The recent Fed proposal, for instance, would impose an essentially contemporaneous reserve system for transactions deposits, allowing only a two-day lag between corresponding reserve computation and maintenance periods.* Thus, to calculate its reserve requirements in a timely fashion, a bank would have to know its reservable transactions-deposit liabilities no later than early in the morning two days later. At present, however, banks have no need to measure their reservable deposits that quickly. And to speed up the process, most banks—particularly those with large branch networks—would need to devote substantial additional personnel and computing resources to the measurement task.

Even supposing that banks could measure their reservable deposits quickly enough, other reserve-management complications would probably be associated with contemporaneous reserve requirements. With such a system, a bank's reserve-position managers could be surprised not only by money inflows and outflows—as at present—but also by changes in the reserve-balance target at which they had to shoot. If a bank came into Wednesday, for instance, with a substantial reserve excess from earlier in the settlement period, and then found that its reserve requirements were substantially lower than it had previously estimated, it might well be unable to avoid carrying excess reserves for the period.

The Federal Reserve's specific proposal for contemporaneous requirements would generally help the banking system to cope with unexpected inflows and outflows of funds by lengthening the settlement period to two weeks. But it is still likely that the over-all cost of reserve management would rise at commercial banks. Thus, a vital question is whether such costs seem likely to exceed any policy benefits which might be expected from contemporaneous requirements. That is an issue on which much doubt exists. The Federal Reserve itself is inclined to hedge on the extent to which contemporaneous requirements would improve the linkage between the supply of bank reserves and the money supply.

*The Fed proposal would double, to two weeks, the length of both the computation and maintenance periods. The two-day lag would apply to transactions deposits, with other deposits subject, effectively, to a four-week lag.

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